

## REMARKS

Claims 2-24 are now in the case.

Claim 1 has been canceled.

Claim 13-20 have been withdrawn from further consideration.

Claims 2-12 are rejected.

No Claim has been allowed.

### The Amendments.

The specification has been amended to correct two grammatical errors.

Claim 1 has been canceled. Independent Claim 2 has been amended to recite that the starch coating is solubilized starch. New Claim 21 recites that the solubilized starch is totally soluble. New Claim 22 recites that the solubilized starch is jet cooked starch. New Claim 23 recites that the hydrophilic coating of solubilized starch consists essentially of starch or cereal flour. Support for these amendments is found on page 8, lines 9-13, and on page 7, lines 11-12, of the specification. Claim 2 has also been amended to recite that the starch coating has a thickness of approximately one micrometer or less and is adherent and firmly attached to the polymeric substrate. Support for these limitations are found in paragraphs [0006], [0016] and [0017]. New Claim 24 recites that the solubilized starch coating consists of nodules, as supported on page 10, nine lines from the

bottom. Claims 11 and 12 have been amended to change the term "plastic" to "polymeric substrate" as recited in Claim 9 and 10.

**Affirmation of Election and Traverse of Restriction Requirement.**

Applicants hereby affirm the provisional election with traverse of the invention of Group I, Claims 1-12, made by the undersigned in a telephone conversation on April 30, 2003.

Applicants request that the restriction requirement be reconsidered because the Examiner has not shown that a serious burden would result if all of the claims are examined together. M.P.E.P. §803 provides that "[i]f the search and examination of an entire application can be made without serious burden, the Examiner must examine it on the merits, even though it includes claims to distinct or independent inventions." (Emphasis added.) Thus, for a restriction requirement to be proper, the Examiner must satisfy the following two criteria: (1) the existence of independent and distinct inventions (35 U.S.C. §121) **and** (2) the search and examination of the entire application cannot be made without serious burden. The Examiner has not shown that the second requirement has been met, specifically that it would be a serious burden to search and examine the claims in Groups I and II together. A search directed to the hydrophobic polymeric substrate coated with a solubilized starch of Group I will necessarily include any art whereby a hydrophobic polymeric

substrate is coated by simply contacting the substrate with a solubilized starch and maintaining the contact until the starch cools as required by the method of Group II. Likewise, a search of the method of Group II would necessarily include any art drawn to the resultant starch-coated polymeric substrate. Accordingly, no additional search and examination over what is already required for Group I is required for examination of both Groups I and II. Applicants therefore request that the Office search and examine claims of Groups I and II together.

**The Rejection under 35 U.S.C. §112.**

Claims 11 and 12 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out distinctly claim the subject matter which Applicants regards as the invention. The basis for this rejection was that both Claims 11 and 12 recited the term "plastic" for which there was insufficient antecedent basis in independent Claim 2. Applicants have used the term "hydrophobic polymers" and "hydrophobic plastics" interchangeably in the disclosure (see, page 7, paragraph [0013]). However, for purposes of consistency, Applicants concur that use of the expression "polymeric substrate" would be preferred, and have amended Claims 11 and 12 accordingly.

**The Rejection under 35 U.S.C. §102(b), Skinner et al.**

Claims 1-3 stand rejected under 35 U.S.C. §102(b) as anticipated by Skinner et al. Skinner has been relied upon as showing a film-forming starch polyacrylonitrile graft copolymer spread onto a substrate (abstract) and a PTFE sheet coated with a starch-hydrolyzed polyacrylonitrile graft copolymer (Example IV). Withdrawal of this rejection is requested for the following reasons.

Skinner is drawn to the preparation of cast films from starch-hydrolyzed polyacrylonitrile (PAN) graft copolymers that are disclosed as having utility as a fabric coating. Though the starch component of this composition may be gelatinized prior to grafting with the PAN (col. 1, line 21), that is not the same as being solubilized, in that solubilization requires complete disruption of the starch granules (col. 8, line 3 of the specification). Likewise, the starch PAN graft copolymer of Skinner is not solubilized, but is merely dispersible in water (col. 2, lines 44-50). The latex is an added component to the formulation, but is not disclosed as being a substrate for a coating of the starch. Given that the starch in the reference is not solubilized, the rejection under 35 U.S.C. 102(b) must fail.

**The Rejection under 35 U.S.C. §102(b), Osaka and Lewis.**

Claims 1-8 stand rejected under 35 U.S.C. §102(b) as anticipated by Osaka as evidenced by Lewis. Withdrawal of this rejection is in order for the reasons that follow.

Osaka relates to preparation of a surface of an article for application of water soluble or water-based printing ink by coating the surface with an agent comprising starch powder. Lewis has been relied upon to show the amylose/amylopectin composition of cornstarch, a fact that is not disputed. Osaka most clearly is silent as to any treatment of the starch that would render it soluble and thereby capable on its own accord of adhering to a polymeric substrate. Accordingly, it is unclear as to whether the treated surfaces of Osaka are indeed rendered hydrophilic as required by Applicants' claims, or rather merely made to be receptive to a water-based printing ink.

**The Rejection under 35 U.S.C. §102(b), Toppan Printing Co. Ltd.**

Claims 1-3, 5 and 6 stand rejected under 35 U.S.C. §102(b) as anticipated by Toppan Printing Co. Ltd. **An English translation of this reference is enclosed.** Withdrawal of this rejection is requested for the following reasons.

Toppan discloses a method for manufacturing a porous thermoplastic block by applying strips of water-soluble resin onto films or sheets of plastic, stacking a plurality of the

sheets, molding them together into a block at elevated temperature, and finally dissolving the resin to leave holes in the molded block. The reference includes starch as one of many possible resins. There is no indication in Toppan that the resin coating is firmly attached to the plastic material. Moreover, insofar as the coating is designed to be removed at the end of the manufacturing process, it would be apparent to the skilled artisan that the coating should be as labile as possible. In addition, Toppan makes it clear that the starch coating should preferably be no less than 100 $\mu$  in thickness (paragraph 4, page 2 of translation). This is in stark contrast to the coating of the Applicants which is approximately 1 $\mu$  or less. The criticality of the thinness of Applicant's coating is that it remains flexible and firmly adherent on the polymeric substrate and is resistant to cracking and flaking off of the substrate (paragraph [0006], [0014] and [0017] of specification).

**The Rejection under 35 U.S.C. §102(b), Kogyo and Lewis.**

Claims 1-3, 5 and 6 stand rejected under 35 U.S.C. §102(b) as anticipated by Kogyo as evidenced by Lewis. Withdrawal of this rejection is in order for the reasons that follow.

Lewis has been relied upon for teaching the constituents of cornstarch as previously discussed. Kogyo teaches a plastic film 1 for packaging cheese having one side coated with a wax mixture

2, and the wax is, in turn, coated with what appears from FIG. 1 to be granules or particles of starch 3. Thus, the starch is not directly applied to, nor is it adherent to, the plastic film 1. Moreover, there is nothing in Kogyo to indicate that the starch is solubilized starch or that it is firmly attached to a hydrophobic polymeric substrate.

**The Rejection under 35 U.S.C. §102(b), Top Foods.**

Claims 1-3, 5 and 6 stand rejected under 35 U.S.C. §102(b) as anticipated by Top Foods. Withdrawal of this rejection is requested for the following reasons.

Top Foods teaches a transfer sheet for transferring an image from a water-soluble edible film to the surface of a food containing moisture. Although the reference speaks of the starch as being "dissolved" in a liquid such as water, there is nothing to indicate that the starch is in any form other than a dispersion. To form a true solution, it is necessary to treat the starch under conditions that result in significant molecular degradation, such as the jet cooking disclosed by Applicants. It is not uncommon for the literature to speak loosely of starch dispersions as solutions. Moreover, it is clear that it is the intent of the reference for the starch coating to NOT be firmly attached to the plastic film, so that the coating having an edible ink design thereon is easily transferred from the plastic film to the surface of a food product.

**The Rejection under 35 U.S.C. §103(a), Skinner.**

Claims 9-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Skinner et al. The Examiner acknowledges that the reference fails to teach the claimed coating weights, but maintains that it would have been obvious to use any amount of starch component necessary to optimize adhesion and absorbency of the coating based on the broad range (2-98%) of starch component in the film and film thickness of 0.05 inches. Withdrawal of this rejection is hereby requested.

The 2-98% by weight range in Skinner relates not to starch per se, but rather to the percentage of starch-hydrolyzed polyacrylonitrile graft copolymer in a composition that also contains 2-98% by weight of a component selected from acrylic, styrene, vinyl, or butadiene type latex. As a graft copolymer, the starch is not solubilized as previously indicated. Moreover, these broad ranges of copolymer and latex components fail to direct the skilled artisan to the specific coating weights of the claims.

**The Rejection under 35 U.S.C. §103(a), Osaka.**

Claims 9-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Osaka Printing Ink Mfg. Co. The Examiner acknowledges that the reference fails to teach the claimed coating weights, but maintains that it would have been obvious to



use any amount of starch component necessary to optimize adhesion drying time and scratch resistance of the coating based on the teaching of using 2-20% of starch component in the coating agent. It is unclear whether it is the coating agent or the starch component of the coating agent that is present on the material at the 2-20% level. Moreover, there is no basis for a person in the art to correlate these quantities to the coating weights of the claims. Accordingly, withdrawal of this rejection is requested.

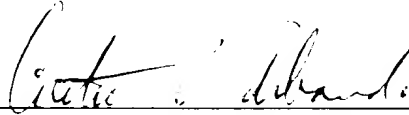
**Summary.**

The claims as now amended are believed to clearly obviate the several rejections under 35 U.S.C. §112, 102(b), and 103(a). None of these references, whether taken alone or in combination, fairly teaches or suggests the Applicants' inventive concept of coating of a hydrophobic polymeric substrate having an adherent, firmly attached hydrophilic coating of solubilized starch at a thickness of 1 micrometer or less.

Applicants have traversed the Restriction Requirement between the article of manufacture and the method of making it on the grounds that search and examination of both groups of claims would not place a serious burden on the Examiner.

Accordingly, Claims 2-23 are believed to be in condition for allowance and a favorable action thereon is earnestly solicited.

Respectfully submitted,



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Enclosures:

English Translation (3 pages)